

CLAIMS

1. Insoluble particles comprising paramagnetic complexes of Lanthanide or transition metal chelates as MR-Imaging Probes, administered in form of
5 particulate which is internalised by cells where they are degraded enzymatically or by effectors in the environment surrounding them, giving rise to water soluble MR-Imaging Probes.
2. Particles according to claim 1, characterised in that their insolubility is due to hydrophobic substituents bound to the surface of the chelating cage.
- 10 3. Particles according to claim 2, wherein the hydrophobic substituents are aliphatic chains conjugated to the paramagnetic complex through an ester or amide bond.
4. Particles according to claim 1, characterised in that their insolubility is due to a macromolecular component forming the particle itself.
- 15 5. Particles according to claim 4, characterised in that the paramagnetic complexes are covalently bound to the macromolecular component.
6. Particles according to claims 1-5, wherein the paramagnetic complex is a Gd(III) chelate.
7. Particles according to claims 1-5, wherein the paramagnetic complex is a
20 Mn(II) or a Mn(III) chelate.
8. Particles according to claim 4, wherein the insoluble macromolecule is chitosan or derivatives thereof.
9. Particles according to claim 8, wherein the paramagnetic complex is entrapped inside the macromolecular network through non-covalent
25 interactions.
10. Particles according to claim 9, wherein the paramagnetic complex is a Gd(III) chelate endowed with a residual negative charge.
11. Particles according to claim 9, wherein the paramagnetic complex is a

Mn(II) or a Mn(III) chelate endowed with a residual negative charge.

12. Particles according to claims 1-11, covered by a dextran polymer or other suitable material to favour the formation of stable suspensions and to increase the lifetime of the particles in blood.
- 5 13. Particles according to claims 1-11, functionalised with synthons able to target them to interact with specific recognition sites on the outer membrane of the cells of interest, thus stimulating their cell-internalization.